

PR-10

LUMINESCENCE STUDIES ON Pr³⁺& Yb³⁺ DOPED CADMIUM CALCIUM PYROPHOSPHATE NANOPHOSPHORS

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Abstract. The Cadmium Calcium Pyrophosphate doped with Pr³⁺ and Yb³⁺ was prepared by solution combustion synthesis. The luminescence studies and chromatic properties of prepared sample were examined in the present study. The luminescence spectra of CdCaP: Pr³⁺ shows relevant peaks with emission at 603 nm upon excitation of 445 nm, whereas CdCaP: Yb³⁺ shows peak at 805 nm when excited with 600 nm. The CIE 1931 chromaticity color coordinates for CdCaP:Pr³⁺ & CdCaP: Yb³⁺ were located in orange and greenish regions respectively. CCT and color purity values of the prepared sample were evaluated using McCamy empirical formula and respective equation of color purity. CRI values of the prepared samples were calculated using color calculator, values are in between 80-90% for both CdCaP: Pr³⁺ & CdCaP: Yb³⁺. The evaluated CIE, CCT and CRI values of these two samples are suitable for optical devices.